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IS : 2725 - 1964
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Indian Standard

QUALITY TOLERANCES FOR WATER FOR RAYON-MANUFACTURING INDUSTRY

(First Reprint OCTOBER 1983)

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MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG
NEW DELHI 110002

Gr 2 *June* 1964

AMENDMENT NO. 1 OCTOBER 1968

TO

IS:2725-1964 QUALITY TOLERANCES FOR WATER FOR RAYON-MANUFACTURING INDUSTRY

Alterations

(*Page* 3, *clause* **2.2**) — Substitute the following for the existing clause and delete the corresponding foot-note with an asterisk (*) mark:

'**2.2 Algæ and Mould Spores** — The water shall be free from algæ and mould spores when tested as prescribed in **4** of IS : 1622-1964 Methods of Sampling and Test for Microbiological Examination of Water Used in Industry.'

(*Page* 3, *clause* **2.3**) — Substitute the following for the existing clause:

'**2.3 Bacteriological Quality** — The bacteriological quality of water shall be such that bacteria growing on agar at 37°C for 2 days shall not exceed 100 per ml when determined in accordance with 5 of IS: 1622-1964 Methods of Sampling and Test for Microbiological Examination of Water Used in Industry.'

(*Page* 3, *clause* **2.5**) — Substitute the following for the existing clause:

'**2.5** The water shall also comply with the tolerances prescribed in Table 1 when tested according to the methods given in IS : 3025-1964 Methods of Sampling and Test (Physical and Chemical) for Water Used in Industry. Reference to the relevant clauses of the standard is given in col 4 of the table.'

(*Page* 3, *Table* 1, *col* **4** *and* 5) — Substitute the following for the existing col 4 and 5 against respective serial numbers:

SL No.	METHOD OF TEST (REF TO CL No. IN IS : 8025-1964) (4)
i)	5
ii)	6
iii)	12
iv)	13
v)	16
vi)	30
vii)	32
viii)	35
ix)	32 and 35
x)	37

(*Page* 4, *clause* **3.1**) — Substitute the following for the existing clause and delete the corresponding foot-note with an asterisk (*) mark:

'**3.1** Representative test samples of water shall be drawn as prescribed in **2** of IS : 1622-1964 Methods of Sampling and Test for Microbiological Examination of Water Used in Industry, and **2** of IS: 3025-1964 Methods of Sampling and Test (Physical and Chemical) for Water Used in Industry.'

(*Page* 4, *clause* **4.1**) — Substitute the following for the existing clause;

'**4.1** Tests shall be carried out as prescribed in Appendix A and the appropriate clauses, indicated against the characteristic in Table 1, of IS : 1622-1964 Methods of Sampling and Test for Microbiological Examination of Water Used in Industry, and IS : 3025-1964 Methods of Sampling and Test (Physical and Chemical) for Water Used in Industry.'

(*Page* 4, *clause* **A-2.1**) — Substitute the following for the existing clause:

'**A-2.1** Determine the *p*H or total alkalinity (*see* **A-0.1.1**) of the sample as prescribed in **8** or 13 respectively of IS : 3025-1964 Methods of Sampling and Test (Physical and Chemical) for Water Used in Industry.'

(CDC 26)

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IS : 2725 - 1964

Indian Standard
QUALITY TOLERANCES FOR WATER FOR RAYON-MANUFACTURING INDUSTRY

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Indian Standard

QUALITY TOLERANCES FOR WATER FOR RAYON-MANUFACTURING INDUSTRY

0. FOREWORD

0.1 This Indian Standard was adopted by the Indian Standards Institution on 3 April 1964, after the draft finalized by the Water Sectional Committee had been approved by the Chemical Division Council.

0.2 Processing in rayon-manufacturing industry is greatly affected by certain impurities present in water. This standard is intended to guide rayon-manufacturers in judging the suitability of a particular supply of water for that industry and in planning the type of treatment required for available supplies of water.

0.3 In the preparation of this standard, assistance has been obtained from Special Technical Publication No. 148-D Manual on Industrial Water and Industrial Waste Water, Second Edition 1959, published by the American Society for Testing and Materials, USA.

0.4 For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS: 2-1960 Rules for Rounding Off Numerical Values (*Revised).* The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

0.5 This standard is intended chiefly to cover the technical provisions relating to water for rayon-manufacturing industry, and it does not include all the necessary provisions of a contract.

1. SCOPE

1.1 This standard prescribes the quality tolerances for water used in rayon-manufacturing industry.

2. TOLERANCES

2.1 Corrosivity — The water shall be non-corrosive when tested as prescribed in Appendix A.

2.2 Algae and Mould Spores — The water shall be free from algæ and mould spores when tested as prescribed in *IS : 1622- Methods of Test for Microbiological Examination of Industrial Water.

2.3 Bacteriological Quality — The bacteriological quality of water shall be such that bacteria growing on agar at 37°C for 2 days shall not exceed 100 per ml when determined in accordance with the appropriate method in *IS : 1622-

2.4 Odour — The water shall be free from objectionable odour.

2.5 The water shall also comply with the tolerances prescribed in Table I when tested according to the methods given in IS: 1620-1961 Methods of Test (Chemical) for Industrial Water and IS : 1631-1960 Methods of Test (Physical) for Industrial Water. Reference to the relevant clauses of these two standards is given in col 4 and 5 of the table.

TABLE I TOLERANCES FOR WATER FOR RAYON-MANUFACTURING INDUSTRY

SL No.	CHARACTERISTIC	TOLERANCE	METHOD OF TEST (REF TO CL NO. IN)	
			IS: 1620-1961	IS: 1631-1960
(1)	(2)	(3)	(4)	(5)
i)	Colour (Hazen units), *Max*	5.0	—	4
ii)	Turbidity (silica scale units), *Max*	1.0	—	5
iii)	Total dissolved solids, mg/1, *Max*	200	—	11
iv)	Total alkalinity (as $CaCO_3$), mg/1, *Max*	75.0	3	–
v)	Total hardness (as $CaCO_3$), mg/l, *Max*	5.0	6	–
vi)	Silica (as SiO_2), mg/l, *Max*	10.0	20	—
vii)	Iron (as Fe), mg/1, *Max*	0.05	22	—
viii)	Manganese (as Mn), mg/1, *Max*	0.03	25	—
ix)	Iron (as Fe) and manganese (as Mn), mg/l, added together, *Max*	0.05	22 and 25	—
x)	Heavy metals (as Pb), mg/1, *Max*	0.01	27	—

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*Under preparation. Till such time as this standard is published, the methods of test shall be as agreed to between the concerned parties.

3. SAMPLING

3.1 Representative test samples of water shall be drawn as prescribed in IS : 1621-1963 Methods of Sampling of Industrial Water for Physical and Chemical Tests and *IS : 1622- Methods of Test for Microbiological Examination of Industrial Water.

4. TEST METHODS

4.1 Tests shall be carried out as prescribed in Appendix A and the appropriate clauses, indicated against the characteristic in Table I, of IS : 1620-1961 Methods of Test (Chemical) for Industrial Water, *IS : 1622- , and IS: 1631-1960 Methods of Test (Physical) for Industrial Water.

APPENDIX A

(Clauses 2.1 *and* 4.1 *)*

TEST FOR CORROSIVTTY

A-0. PRINCIPLE OF THE METHOD

A-0.1 This qualitative test determines the stability of a water with respect to calcium carbonate. The *p*H of the water is determined before and after treatment with calcium carbonate. Any increase in *p*H as a result of this test indicates corrosivity.

A-0.1.1 If, due to non-availability of a *p*H meter, it is inconvenient to determine *p*H, the test is carried out by determining alkalinity of the water.

A-1. REAGENT

A-1.1 Precipitated Calcium Carbonate — pure. Place about 10 g of the powdered material in a 250-ml glass-stoppered bottle. Wash thrice with portions of the sample to be tested, by stirring, allowing to settle for several minutes and then pouring off the supernatant liquid while still turbid.

A-2. PROCEDURE

A-2.1 Determine the *p*H or total alkalinity (*see* **A-0.1.1**) of the sample as prescribed in **7** of IS : 1631-1960 Methods of Test (Physical) for Industrial Water and **3** of IS : 1620-1961 Methods of Test (Chemical) for Industrial Water respectively.

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*Under preparation. Till such time as this standard is published, the relevant methods of sampling and test shall be as agreed to between the concerned parties.

A-2.2 Take the glass-stoppered bottle containing washed calcium carbonate (*see* **A-1.1**), fill it up with the sample and insert the stopper without allowing any air bubble to remain. Shake well to bring the powder in suspension throughout the bottle and set aside. Repeat shaking at frequent intervals for about 4 hours. Finally, allow to stand overnight and then filter rapidly by decanting through a filter paper. Determine the *p*H or total alkalinity of the filtrate.

A-2.3 The water shall be considered non-corrosive if the *p*H or total alkalinity determined in **A-2.2** is not greater than that determined in **A-2.1.**

INTERNATIONAL SYSTEM OF UNITS (SI UNITS)

Base Units

Quantity	*Unit*	*Symbol*
Length	metre	m
Mass	kilogram	kg
Time	second	s
Electric current	ampere	A
Thermodynamic temperature	kelvin	K
Luminous intensity	candela	cd
Amount of substance	mole	mol

Supplementary Units

Quantity	*Unit*	*Symbol*
Plane angle	radian	rad
Solid angle	steradian	sr

Derived Units

Quantity	*Unit*	*Symbol*	*Conversion*
Force	newton	N	1 N = 1 kg. 1 m/s^2
Energy	joule	J	1 J = 1 N.m
Power	watt	W	1 W = 1 J/s
Flux	weber	Wb	1 Wb = 1 V.s
Flux density	tesla	T	1 T = 1 Wb/m^2
Frequency	hertz	Hz	1 Hz = 1 c/s (s^{-1})
Electric conductance	siemens	S	1 S = 1 A/V
Pressure, stress	pascal	Pa	1 Pa = 1 N/m^2

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